

REMARKS

The foregoing amendments and following remarks are responsive to the Office Action dated June 4, 2009.

Summary of Office Action

In the Office Action, the Examiner objected to the specification because of several informalities. The Examiner also objected to Claim 1 because of a misspelled claim term. Claims 5-15 were objected to under 37 C.F.R. § 1.75(c) as being in improper form. Claims 1-4 were rejected under 35 U.S.C. § 102(c) as being anticipated by U.S. Patent Application No. 2004/0121200, filed by Johnsen et al. (JOHNSEN). In addition, Claims 1-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,761,348 issued to Kunz et al. (KUNZ) in view of U.S. Patent No. 5,019,644 issued to Mitsuda et al. (MITSUDA).

Amendments to the Specification

By this Response, Applicant has made several amendments to the Specification. In particular, Applicant has amended paragraph [0020], [0053] and [0054] to address the informalities noted by the Examiner in the Office Action (i.e., deleting an extra period, and correcting a misspelled word).

In addition, Applicant has also amended paragraph [0089] and added new paragraphs [0089.1] and [0089.2] to add a description of Figure 3 to the Description of the Drawings section.

Applicant submits that the above-described amendments to the Specification do not introduce new matter.

Response to Claim Objections

The Examiner objected to Claim 1 because the phrase “*wherein said reservoir consists of one ore more porous layers*” should read “*wherein said reservoir consists of one or more porous layers.*”

Accordingly, by this response, Applicant has made the above-noted correction to Claim 1, and the Examiner’s objection is therefore believed to be overcome.

The Examiner also objected to Claims 5-15 under 37 C.F.R. § 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and cannot depend from any other multiple dependent claim. Accordingly, Claims 5-12 and 15 have been amended to depend from a single claim. Therefore, the objection to Claims 5-15 is believed to be overcome.

Response to Rejection Under 35 U.S.C. §§ 102(e) and 103(a)

In the Office Action, the Examiner rejected independent Claim 1 under 35 U.S.C. §§ 102(e) and 103(a). As set forth in more detail below, Applicant submits that the cited references do not teach, suggest or make obvious all of the limitations of amended Claim 1.

1. Amended Claim 1

By this response, Applicant has amended independent Claim 1 to recite novel aspects of an embodiment of a molten carbonate fuel cell stack. In particular, Claim 1 has been amended in order to clarify that all of the porous layers of the reservoirs, and hence all the reservoirs and each reservoir in its entirety (specifically, both the positive reservoir and the negative reservoir) are inaccessible to oxidant gases.

As recited in amended Claim 1, all the reservoirs are entirely exposed only to fuel gas environment and inaccessible to oxidant gas. As explained in more detail below, the devices disclosed in the cited prior art are understood to include at least one reservoir, or at least a portion thereof which operates in a cathodic environment and is exposed to oxidant gas.

2. The JOHNSEN Reference Does Not Disclose a Molten Carbonate Fuel Cell Stack Wherein All the Porous Layers of the Reservoirs are Inaccessible to Oxidant Gases.

The Examiner rejected Claim 1 as being anticipated by JOHNSEN. As understood, the JOHNSEN reference relates to an end cell for storing electrolyte in a carbonate fuel cell. More specifically, the JOHNSEN reference appears to disclose stacks wherein the reservoirs are not all exposed exclusively to fuel gas environment and all inaccessible to the oxidant gases. On the contrary, at the positive side, at least a portion of the reservoir component, namely ribbed reservoir 16 (Fig. 2) actually operates in a cathode environment and oxygen flows through the

reservoir (*See* paragraph [0041]). Similarly, at the negative side, also reservoir or sink 26 operates in a cathode environment and oxidant gas flows through the reservoir (*See* paragraph [0051]).

In this regard, JOHNSEN is not believed to disclose a molten carbonate fuel cell stack wherein all the porous layers of the reservoirs are inaccessible to oxidant gases. Therefore, Applicant submits that JOHNSEN does not disclose all of the limitations of amended Claim 1.

3. ***The Combination of KUNZ and MITSUDA Do Not Disclose a Molten Carbonate Fuel Cell Stack Wherein All the Porous Layers of the Reservoirs are Inaccessible to Oxidant Gases.***

In addition to the § 102(e) rejection discussed above, the Examiner also rejected Claim 1 as being unpatentable over the combination of KUNZ and MITSUDA. As understood, KUNZ discloses an electrolytic cell stack with molten electrolyte migration control. In particular, KUNZ teaches the use of reservoir or sink devices arranged externally to the active cells. KUNZ states that *"the reservoirs include a first porous layer of electronically conductive material at the negative end portion of the stack exposed to the oxidant gas supply."* (col. 2, lines 41-44) There is no apparent mention in KUNZ that the negative reservoir, and therefore that all the reservoirs of the device can be inaccessible to oxidant gas. At least one of the reservoirs, according to KUNZ, and specifically reservoir 26 at the negative end of the stack, is exposed to oxidant gas.

ITSUDA appears to teach replacement of the reservoirs of KUNZ with a half-cell anode and a half-cell cathode, provided with respective reactant gas flow paths available for storing electrolyte. Even if such reaction gas flow paths allows electrolyte to be stored and accordingly acts as supplementary reservoir components, ITSUDA does not disclose that such components are all exposed, in use, exclusively to fuel gas and inaccessible to oxidant gas. On the contrary, according to the disclosure of ITSUDA, the negative reservoir (half-cell cathode C101) is fed by cathode gas (*See* col. 6, lines 40-60).

Given that the cited references disclose devices wherein at least a reservoir component is exposed to oxidant gas, a person skilled in the art would receive no teaching to modify any prior art device and obtain the invention as claimed. In other words, Applicant submits that it would not be obvious to remove the reservoir exposed to oxidant/cathodic environment that all the prior

art solutions include. Rather, removal of such a component would be against the teachings of the prior art.

Therefore, Applicant submits that the cited references do not teach, suggest or make obvious all of the limitations of amended Claim 1. Claim 1 is therefore believed to be allowable, as are Claims 2-15, as being dependent upon an allowable base claim.

Conclusion

For the foregoing reasons, Applicant respectfully submits that all pending claims are believed to be in condition for allowance. An early notice of allowance is therefore respectfully requested. Should the Examiner have any suggestions for expediting allowance of the above identified application, the Examiner is invited to contact Applicant's representative at the telephone number listed below.

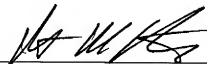
If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

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8/18/09

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